

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	61.782	51.990	153.045	334.530	0.000	334.530	510.637	523.997	463.528	326.147	Continuing	Continuing
675346: F-35	36.485	47.023	127.302	299.408	0.000	299.408	463.621	474.971	396.488	263.548	Continuing	Continuing
676011: JSF DUAL CAPABLE AIRCRAFT	25.297	4.967	25.743	35.122	0.000	35.122	47.016	49.026	67.040	62.599	Continuing	Continuing
Program MDAP/MAIS Code: 198												
<b>Note</b> Schedule changed to reflect impacts from previous budget changes and direction from the Milestone Decision Authority												
<b>A. Mission Description and Budget Item Justification</b> The F-35 Joint Strike Fighter (JSF) Program will develop and field an affordable, highly common family of next generation strike aircraft for the United States Navy, United States Air Force, United States Marine Corps and International Partners countries. The three variants are the F-35A Conventional Takeoff and Landing; F-35B Short Take Off and Vertical Landing; and the F-35C Aircraft Carrier suitable variant.Maximum commonality among the variants, consistent with National Disclosure Policy, will minimize total air system life cycle costs. Planning and pre-development systems engineering for the FOM continues as Initial Operational Capability (IOC) is met for each variant during System Development and Demonstration (SDD).  The JSF FoM efforts provide incremental warfighting capability improvements to maintain joint air dominance against current and evolving threats. FoM capability requirements were initiated through ongoing Service-led operational analysis of warfighting gaps identified in the Fifth Generation Fighter Modernization Initial Capabilities Document (ICD), and through F-35 JSF FoM Mission Decomposition analysis completed in FY2014. These analyses serve as the basis for the F-35 FoM Capabilities Development Document (CDD), staffed through the Air Force Requirements Oversight Council (AFROC) and signed by the USAF Chief of Staff in January 2015. Joint Requirements Oversight Council (JROC) approved the CDD 21 March 2017. Pre-modernization activities in FY2017 and FY2018 include systems engineering, risk reduction, and infrastructure upgrades to support initial fleet availability of FoM upgrades in 2021.  FoM efforts designated as Block 4 include a robust weapons integration portfolio and provide new opportunities for International Partners to assess, integrate, and field unique capabilities based on global sovereign requirements. Additionally, the F-35 JSF Operational Requirements Document (ORD) calls for the F-35A to have the capabilities and provisions for Dual-Capable Aircraft (DCA) operations in the first post-SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operation for the F-35A is internal carriage of up to two B-61s. Due to extensive certification requirements, the DCA capability planning and design, testing and certification will continue throughout Block 4.  The United Kingdom, Italy, Netherlands, Turkey, Canada, Australia, Denmark and Norway are participants in F-35 modernization. The program shown here reflects United States Marine Corps funding. Total funding for all Service and International Partners is reported at the accomplishment/planned program level since activities support all aircraft variants. Foreign Military Sales are ongoing separately.												

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force				Date: May 2017	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		PE 0207142F I F-35 Squadrons			
B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	53.921	153.045	349.389	0.000	349.389
Current President's Budget	51.990	153.045	334.530	0.000	334.530
Total Adjustments	-1.931	0.000	-14.859	0.000	-14.859
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.931	0.000			
• Other Adjustments	0.000	0.000	-14.859	0.000	-14.859
Change Summary Explanation					
FY 2018 Decrease: General program reduction and HPSI (Hybrid Product Support Integrator) increase net to -\$14.859M FY 2018 decrease.					

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
675346: F-35	36.485	47.023	127.302	299.408	0.000	299.408	463.621	474.971	396.488	263.548	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Total cost, including International partner contributions, USN, USMC, and USAF funding: FY2016 \$110.517M; FY2017 \$373.463M; FY2018 \$739.755M

R-2A table shown above reflects service funding only.

R-2A (section B)/R-3 displays combined program for JSF Follow-on Modernization (FoM).

JSF FoM Includes:

USAF PE 0207142F BPAC 675346

USN PE 0604810N Project Unit 2936

USMC PE 0604810M Project Unit 2935

USN PE 0604800N Project Unit 9999 (FY14): \$1.500M

USMC PE 0604800M Project Unit 9999 (FY14): \$1.500M

International Partner Contributions

**A. Mission Description and Budget Item Justification**

F-35 FoM provides continuing incremental upgrades of the three F-35 variants and associated ground equipment. Upgrades are essential mission improvements for Air Interdiction and Strategic Attack, Close Air Support, Suppression and Destruction of Enemy Air Defenses, Offensive and Defensive Counter Air and expanded Surface Warfare. The Block 4 acquisition strategy is based upon incremental deliveries of capabilities in 4 sub-blocks. The strategy includes deliveries on a two year cycle with a focus on hardware and tech refresh change every four years. FoM capability planning includes an efficient transition from F-35 SDD to Follow-on Modernization. As SDD development activities ramp down FoM will assume responsibility for improvements and modernization efforts. Block 4 capability planning includes sub-block 4.1 through 4.4 modernization efforts with initial increment of capability available in FY2021 and subsequent releases every two years.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
<b>Title:</b> Block 4 Planning and System Engineering	85.478	265.280	311.270	-	311.270
<b>Description:</b> Block 4 Planning and Systems Engineering preliminarily design and delta SRR for all variants of the F-35 Aircraft. This is a continuation of the previous Block 4 Requirements Decomposition effort which will include activities leading up to a successful System Functional Review (SFR) and select facility upgrades required for Block 4 research, development, test and evaluation. Included in Block 4 are upgraded capabilities					

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force				Date: May 2017		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons		Project (Number/Name) 675346 / F-35		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
and continuous improvements to maintain Air System viability against evolving threats indicated in the Electronic Warfare Initial Capabilities Document (ICD), the Fifth Generation Fighter Modernization ICD, and the FoM Capability Development Document (CDD), reduce life cycle cost, and improve operational suitability. Expected completion of a Block 4.1 Preliminary Design Review (PDR) and a Block 4.2 System Requirements Review (SRR) will address additional Block 4 capabilities requirements. Post-PDR risk reduction and pre-planning for subsequent Block 4 Modernization events are included. Capability planning effort and preparations will lead to formal acquisition approval of a Block 4 Modernization contract.						
FY 2016 Accomplishments: Continued FoM requirements analysis and technical requirements development and decomposition, systems engineering, and technical planning.						
FY 2017 Plans: Continue requirements analysis and technical requirements development and decomposition, systems engineering, and technical planning. Conduct Block 4.1 System Requirements Review (SRR).						
FY 2018 Base Plans: Conduct a Block 4.1 System Functional Review (SFR) followed by initiation of preliminary design. Release the Block 4 modernization Request for Proposal (RFP) 1QFY2018 with contract award planned for 1QFY2019.						
Title: Technology Refresh 3 (TR-3)		14.214	32.515	150.370	-	150.370
Description: Technology Refresh 3 (TR-3) Design Competition, Development, Integration, and Test. This is the design phase of TR-3 program fully supports Block 3F functionality and allows incorporation of all Block 4 capabilities documented in the System Requirements Document (SRD). TR-3 hardware redesign is required to support 4X processing growth factor based on the current processing estimates for all 3F capabilities. Redesign of TR-3 subsystems (Integrated Core Processor (ICP), Aircraft Memory System (AMS), and Panoramic Cockpit Display (PCD)) configurations will contain new backplane technology, commercial operating systems, and modified middleware necessary to take the design of the TR-3 System through Critical Design Review (CDR).						
FY 2016 Accomplishments: TR-3 Program produced 5 government-owned specifications to inform the new F-35 avionics hardware redesign required to support 4X processing growth factor based on current processing estimates for all 3F capabilities.						

## UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force				Date: May 2017		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons		Project (Number/Name) 675346 / F-35		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
The program also started the design of the new Integrated Core Processor (ICP), Panoramic Cockpit Display (PCD), and Aircraft Memory System (AMS). <b>FY 2017 Plans:</b> The TR-3 program continued to design the Integrated Core Processor (ICP), Panoramic Cockpit Display (PCD), and Aircraft Memory System (AMS). The program will hold System Requirements Review and Preliminary Design Review for the ICP, PCD, and AMS to ensure on-time Critical Design Review, which drives timely first article delivery to the production line in FY23. <b>FY 2018 Base Plans:</b> The TR-3 program will continue design toward Critical Design Review of the Integrated Core Processor (ICP), Panoramic Cockpit Display (PCD), and Aircraft Memory System (AMS). In addition the TR-3 program will prototype the middleware software that will enable F-35's new messaging architecture delivered as part of TR-3 and ensure compatibility with current F-35 sensors. Additionally the initial lab stand up will occur to ensure timely first article delivery to the production line in FY23.						
<b>Title:</b> Infrastructure and Support Costs <b>Description:</b> Funding will support infrastructure investment planning and other test planning activities required for Block 4 development, integration, test and evaluation. Funding related to the Integrated Test Force, government, and contractor labor. Other costs in support of ranges, chase planes and DT site operations <b>FY 2016 Accomplishments:</b> Continue development support for defining, managing and acquiring the F-35 capability enhancements identified in approved requirements documents. <b>FY 2017 Plans:</b> Continue development support for defining, managing and acquiring the F-35 capability enhancements identified in approved requirements documents. <b>FY 2018 Base Plans:</b> Continue development support for defining, managing and acquiring the F-35 capability enhancements identified in approved requirements documents. Transfer of integrated test force requirement to FoM F-35 SDD draws to closure. USAF only will fund additional PMA to transition to a final hybrid product support integrator (HPSI) which will support sustainment analysis with product support managers, focused on long term strategic planning and		10.825	70.668	114.115	-	114.115

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
transition to a final integrated support plan. Conduct strategic basing analysis to determine permanent location for core of HPSI.											
<b>Title:</b> Test and Evaluation							0.000	5.000	164.000	-	164.000
<b>Description:</b> Non-recurring engineering required to plan for the service life extension of existing DT aircraft and modification necessary to bring DT aircraft fleet to a common configuration. Additional upgrades required to support development and evaluation of improvements driven by changes in the threat environment and as identified in the Electronic Warfare ICD, the Fifth Generation Fighter Modernization ICS, and the FoM Capability Development Document(CDD). Execution all DT activities in support of Block 4.											
<b>FY 2016 Accomplishments:</b> N/A											
<b>FY 2017 Plans:</b> Award initial contract in support of the non-recurring engineering effort.											
<b>FY 2018 Base Plans:</b> Funding will support investment planning and prioritization required to maintain future development capability. This funding supports the non-recurring engineering (NRE) for capability upgrades and service life extension modifications to include engine, structural and mission systems updates to maintain the viability of DT fleet for FoM efforts. This funding also supports laboratory upgrades required to support development and verification of capabilities in a relevant environment.											
Accomplishments/Planned Programs Subtotals							110.517	373.463	739.755	-	739.755
Other Service Program Funding Adjustment							63.494	246.161	440.347	-	440.347
Air Force Subtotals							47.023	127.302	299.408	-	299.408
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604800F 3831: JSF SDD, BPAC 653831	497.031	403.505	255.745	0.000	255.745	69.655	7.796	5.598	0.000	0.00	22,265.228

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604800F 3832: JSF Deployability and Suitability Enhancements, BPAC 653832	78.901	46.962	37.202	0.000	37.202	0.000	0.000	0.000	0.000	0.00	238.599
• RDTE: BA07: PE 0207142F 6011: Dual Capable Aircraft (DCA), BPAC 676011	4.967	25.743	35.122	0.000	35.122	47.016	49.026	67.040	62.599	Continuing	Continuing
• APAF: BA01: Line Item # ATA000 AP: JSF CTOL Advance Procurement, PE 0207142F, BP10 AP	460.260	404.500	780.300	0.000	780.300	405.200	1,003.600	965.300	414.700	20,154.954	27,497.747
• APAF: BA01: Line Item # ATA000: JSF CTOL, PE 0207142F, BP10	5,259.812	4,997.394	4,544.684	0.000	4,544.684	4,253.696	4,209.813	4,862.684	4,796.042	148,685.767	201,649.676
• APAF: BA06: Line Item # F03500 BP16: JSF Initial Spares, PE 0207142F, BP16	229.582	362.792	320.831	0.000	320.831	319.151	416.722	399.361	394.654	3,893.112	7,567.519
• APAF: BA05: Line Item # F03500 BP11: JSF Modifications, PE 0207142F, BP11	70.167	175.811	68.270	0.000	68.270	230.448	279.814	259.978	301.899	Continuing	Continuing
• USAF OM: Operations and Maintenance	312.557	425.978	452.906	0.000	452.906	555.687	873.270	998.979	958.708	Continuing	Continuing
• OPAF: BA01: Line Item # 821800: Joint Strike Fighter, PE 0207142F	3.858	2.333	3.326	0.000	3.326	3.310	2.993	2.463	2.507	Continuing	Continuing
• MILCON: BA01: PE 0207142F: USAF JSF Military Construction Operations	132.850	305.700	80.000	0.000	80.000	27.500	0.000	0.000	0.000	1,312.100	2,511.350
• MILCON: BA01: PE 0207597F: USAF JSF Military Construction Training	65.400	20.000	21.000	0.000	21.000	34.000	15.900	0.000	0.000	0.00	156.300
• MILCON: BA01: PE 0502635F: USAF JSF Military Construction Air National Guard	0.000	15.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	15.100
• RDTEN: BA05: PE 0604800N 2261: JSF SDD (CV)	453.037	504.296	103.144	0.000	103.144	61.179	1.637	0.454	0.467	0.00	19,983.056

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• RD TEN: BA05: PE 0604800N 3352: F-35C Sustainment/ Capability Enhancements (CV)	35.666	24.420	5.787	0.000	5.787	4.995	0.000	0.000	0.000	0.00	108.345
• RD TEN: BA05: PE 0604810N 2936: F-35C Follow-on Modernization (CV), BPAC 2936	20.544	63.387	143.855	0.000	143.855	225.442	229.055	189.104	121.613	Continuing	Continuing
• APN: BA01: Line Item # 0147C: JSF Advance Procurement (CV), PE 0204146N	48.630	80.908	263.112	0.000	263.112	144.282	252.453	262.416	267.646	2,417.943	5,140.935
• APN: BA01: Line Item # 0147: JSF (CV), PE 0204146N	1,033.142	890.650	582.324	0.000	582.324	1,105.952	1,805.276	2,582.852	2,730.285	27,953.966	50,644.344
• APN: BA06: Line Item # 0605 USN: Initial Spares (CV), PE 0204146N	16.914	61.076	77.177	0.000	77.177	87.846	82.735	238.090	170.365	1,063.155	2,162.723
• APN: BA05: Line Item # 0593: Modifications (CV), PE 0204146N	48.527	26.004	31.689	0.000	31.689	22.344	14.155	13.404	13.672	Continuing	Continuing
• OPN BA03: ALIS Ship ALTS Installs	1.924	0.329	2.024	0.000	2.024	1.890	1.933	1.972	0.986	Continuing	Continuing
• OPN: BA03: Spares for Aviation Support Equipment	2.946	0.881	2.297	0.000	2.297	2.321	0.139	1.977	0.000	Continuing	Continuing
• USN OM: Operations and Maintenance	78.529	120.648	207.302	0.000	207.302	211.332	236.682	281.622	327.009	Continuing	Continuing
• DoN MILCON: USN/ USMC MILCON	94.420	230.900	64.660	121.990	186.650	121.900	119.800	0.000	0.000	642.400	1,406.074
• RD TEN: BA05: PE 0604800M 2262: JSF SDD (STOVL)	495.428	507.078	141.534	0.000	141.534	55.952	1.727	0.547	0.564	0.00	3,874.211
• RD TEN: BA05: PE 0604800M 3350: F-35B Sustainment/ Capability Enhancements (STOVL), BPAC 3350	30.819	24.348	11.400	0.000	11.400	0.000	0.000	0.000	0.000	0.00	99.115
• RD TEN: BA05: PE 0604810M 2935: F-35B Follow-on Modernization (STOVL), BPAC 2935	20.157	74.227	144.958	0.000	144.958	226.310	230.383	190.442	123.531	Continuing	Continuing



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification: FY 2018 Air Force</b>			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207142F / F-35 Squadrons	<b>Project (Number/Name)</b> 675346 / F-35	

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN: BA01: Line Item # 0152C: <i>JSF Advance Procurement (STOVL), PE 0204146M</i>	203.060	233.648	413.450	0.000	413.450	228.491	231.802	220.822	225.245	1,959.119	4,802.154
• APN: BA01: Line Item # 0152: <i>JSF (STOVL), PE 0204146M</i>	2,147.714	2,040.681	2,398.139	0.000	2,398.139	2,338.179	2,404.257	2,585.039	2,600.750	20,548.402	42,209.667
• APN: BA06: Line Item # 0605 USMC: <i>Initial Spares (STOVL), PE 0204146M</i>	154.569	214.252	144.819	0.000	144.819	92.360	160.490	141.468	199.767	Continuing	Continuing
• APN: BA05: Line Item # 0592: <i>Modifications (STOVL), PE 0204146M</i>	204.464	34.928	34.963	0.000	34.963	70.305	67.039	79.174	80.761	Continuing	Continuing
• USMC OM: <i>Operations and Maintenance</i>	184.171	233.576	315.630	0.000	315.630	375.578	412.813	470.490	544.031	Continuing	Continuing
• International 1: <i>International SDD</i>	17.000	22.000	27.450	0.000	27.450	0.000	0.000	0.000	0.000	0.00	5,013.463
• International 2: <i>International Production</i>	189.922	185.641	124.114	0.000	124.114	151.776	150.588	149.848	87.113	Continuing	Continuing
• International 3: <i>International FoM</i>	83.595	84.602	158.273	0.000	158.273	159.649	162.023	167.383	160.111	Continuing	Continuing
• International 4: <i>International Unique (SDD/PSFD)</i>	38.483	32.374	15.566	0.000	15.566	22.812	29.409	5.357	0.000	0.00	482.417

**Remarks**

This is a joint program with no executive service. Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Navy. Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to FY2002. The United Kingdom, Italy, Netherlands, Turkey, Canada, Australia, Denmark, and Norway are participants in the SDD phase of JSF.

Note: The USAF/USN/USMC procurement lines include Aircraft Procurement and Advanced Procurement only. Initial Spares and Repair Parts for all Services are reflected in separate lines. International Partner Funding also includes funds provided under the Italy and Netherlands Bilateral agreements.

RELATED RDT&E: Funding prior to JSF SDD (FY94-FY01): USN PE 0603800N \$1,950,617; USAF PE 0603800F \$1,907,352; DARPA PE 0603800E \$118,056; and International Partner contributions of \$253,921 for a total of \$4,229,946.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Air Force		<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207142F / <i>F-35 Squadrons</i>	<b>Project (Number/Name)</b> 675346 / <i>F-35</i>
<p><b><u>D. Acquisition Strategy</u></b></p> <p>The FoM acquisition strategy is to employ both Cost and Fixed Price Incentive contracts for the Block 4 engineering and development efforts. A new modernization contract structure will be established for all post SDD Block 4 efforts. In addition, a separate Basic Ordering Agreement or Indefinite Quantity/Indefinite Delivery contract is planned to provide a long term approach to upgrading and maintaining laboratories and test aircraft and supporting technology maturation for future FoM capabilities.</p> <p><b><u>E. Performance Metrics</u></b></p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force													Date: May 2017		
Appropriation/Budget Activity 3600 / 7							R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35				
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prime LM TBD PHASE II	SS/CPFF	Lockheed Martin : Ft Worth, TX	0.000	0.000		171.760	Dec 2017	130.370	Dec 2017	0.000		130.370	657.019	959.149	959.149
Prime LM BOA 0020 (Nimble Lightning+Pilot Training)	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	1.206	Dec 2015	0.000		0.000		0.000		0.000	5.470	6.676	6.676
Prime LM 02-C-3002	SS/CPFF	Lockheed Martin : Ft Worth, TX	19.485	3.707	Dec 2015	0.000		0.000		0.000		0.000	23.192	46.384	46.384
Prime LM 16-C-0008	SS/CPFF	Lockheed Martin : Ft Worth, TX	38.868	80.299	Dec 2015	39.853	Dec 2016	0.000		0.000		0.000	86.812	245.832	245.832
Prime LM 14-G-0020(TR3)	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	14.214	Mar 2017	32.515	Mar 2017	150.370	Dec 2017	0.000		150.370	466.040	663.139	663.139
Prime LM TBD (Modernization)	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	0.000		40.297	Dec 2017	115.900	Dec 2017	0.000		115.900	1,878.246	2,034.443	2,034.443
Prime LM IDIQ TBD	SS/CPFF	Lockheed Martin : Ft Worth, TX	0.000	0.000		0.000		65.000	Dec 2017	0.000		65.000	65.000	130.000	65.000
Product Development Sys Engineering	Various	Various : TBD	0.000	0.266	Dec 2015	13.370	Dec 2016	0.000	Dec 2017	0.000		0.000	84.010	97.646	97.646
Program Management	Various	Not specified. : TBD	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
Subtotal			58.353	99.692		297.795		461.640		0.000		461.640	3,265.789	4,183.269	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : TBD	6.277	1.626	Dec 2015	8.714	Dec 2016	8.215	Dec 2017	0.000		8.215	68.103	92.935	92.935
AFFTC / Eglin AFB	Various	Eglin : Various	0.015	0.000		1.940	Dec 2016	3.220	Dec 2017	0.000		3.220	18.882	24.057	24.057
NAWC Paxutent River	WR	NAWCAD : Paxutent River, MD	0.400	7.503	Dec 2015	20.970	Dec 2016	15.496	Dec 2017	0.000		15.496	138.721	183.090	188.090
NAWC China Lake	WR	NAWCWD : China Lake, CA	0.000	0.429	Dec 2016	7.383	Dec 2016	4.808	Dec 2017	0.000		4.808	Continuing	Continuing	-
Edwards Air Force Base	Various	Edwards AFB : Various	0.000	0.986	Dec 2016	0.000		2.200	Dec 2017	0.000		2.200	11.380	14.566	14.566

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force													Date: May 2017		
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35					
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AFLCMC/AFRL	MIPR	AFLCMC : Wright Patterson AFB, OH	0.000	0.281	Dec 2016	0.232	Dec 2016	0.464	Dec 2017	0.000		0.464	3.037	4.014	4.014
Subtotal			6.692	10.825		39.239		34.403		0.000		34.403	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NAWC Paxutent River	Various	Various : Paxutent River, MD	0.000	0.000		0.000		10.478	Dec 2017	0.000		10.478	174.872	185.350	185.350
NAWC China Lake	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		1.050	Dec 2017	0.000		1.050	24.396	25.446	25.446
Developmental Test & Evaluation Edwards/AFB	Various	Edwards AFB : Edwards AFB, CA	0.000	0.000		0.000		12.471	Dec 2017	0.000		12.471	289.067	301.538	301.538
Developmental Test & Evaluation	Various	Various : TBD	0.000	0.000		0.000		6.001	Dec 2017	0.000		6.001	57.087	63.088	63.088
Developmental Test Aircraft Viability	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	0.000		5.000	Sep 2017	134.000	Dec 2017	0.000		134.000	0.000	139.000	139.000
Subtotal			0.000	0.000		5.000		164.000		0.000		164.000	545.422	714.422	714.422
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Functional Wyle	C/CPFF	Wyle : Arlington, VA	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
AFLCMC Civilian Pay	Various	AFLCMC CIV PAY : Wright Patterson AFB, OH	0.000	0.000		30.550	Nov 2016	40.000	Nov 2017	0.000		40.000	231.610	302.160	302.160
Financial Mgmt Database Support IDS	C/CPAF	IDS : Arlington, VA	0.000	0.000		0.760	Nov 2016	0.800	Nov 2017	0.000		0.800	4.301	5.861	5.861
Earned Value/Finance/ Cost ACT-I	C/CPAF	ACT-I : Arlington, VA	0.000	0.000		0.000		3.178	Nov 2017	0.000		3.178	23.518	26.696	-

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force** **Date:** May 2017

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207142F / F-35 Squadrons	<b>Project (Number/Name)</b> 675346 / F-35
--	--	---

Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CIO Jacobs	C/CPAF	Jacobs : TBD	0.000	0.000		0.000		20.000	Nov 2017	0.000		20.000	95.066	115.066	-
Systems System High BOS	Various	Various : TBD	0.000	0.000		0.000		9.336	Nov 2017	0.000		9.336	45.342	54.678	-
Security Mantech	C/CPAF	Mantech : TBD	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
Other CIO Services	Various	Not specified. : TBD	0.000	0.000		0.000		4.739	Nov 2017	0.000		4.739	22.579	27.318	-
Travel	Various	Not specified. : TBD	0.000	0.000		0.119	Nov 2016	1.659	Nov 2017	0.000		1.659	8.569	10.347	-
Program Management	Various	Not specified. : TBD	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
<b>Subtotal</b>			0.000	0.000		31.429		79.712		0.000		79.712	430.985	542.126	-

	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Cost Category Subtotals</b>	65.045	110.517	373.463	739.755	0.000	739.755	-	-	-
Other Service Program Funding Adjustment	28.560	63.494	246.161	440.347	-	440.347	0.000	778.562	-
<b>Project Cost Totals</b>	36.485	47.023	127.302	299.408	0.000	299.408	0.000	-778.562	-

**Remarks**

The Project information shown here reflects USN, USMC, USAF and International Partner funding total for each contract. By agreement, USN and USMC funding shares are approximately equal and when combined are equal to the USAF share. Partner funding share is based upon future aircraft procurement numbers updated annually in accordance with the Production, Sustainment, Follow-on Modernization (FoM) Memorandum of Agreement.

Prior Years reflects \$26.660M USAF/\$11.802M USN/\$11.586M USMC/\$14.997M International/Total \$65.045M

FY 2016 reflects \$47.023M USAF/\$20.544M USN/\$20.157M USMC/\$22.793M International/Total \$110.517M

FY 2017 reflects \$127.302M USAF/\$63.387M USN/\$74.227M USMC/\$108.547M International/Total \$373.463M

FY 2018 reflects \$299.832M USAF/\$143.855M USN/\$144.958M USMC/\$151.110M International/Total \$739.755M

F-35 FoM Includes:

USAF PE 0207142F BPAC 675346

FY13: USN PE 0604800N Project Unit 2261

FY14: USN PE 0604800N Project Unit 3353

FY15: USN PE 0604810N Project Unit 2936

FY13: USMC PE 0604800M Project Unit 2262

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force							Date: May 2017			
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons		Project (Number/Name) 675346 / F-35				
	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract	
FY14: USMC PE 0604800M Project Unit 3351 FY15: USMC PE 0604810M Project Unit 2935										

## UNCLASSIFIED

Exhibit R-4, RDT&amp;E Schedule Profile: FY 2018 Air Force

Date: May 2017

## Appropriation/Budget Activity

3600 / 7

## R-1 Program Element (Number/Name)

PE 0207142F / F-35 Squadrons

## Project (Number/Name)

675346 / F-35

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Requirements: Final CDD (JROC)																												
Acquisition: Modernization RFP Decision																												
Acquisition: Modernization Contract Decision																												
Acquisition: Interim Program Review (IPR) FY18																												
Acquisition: Interim Program Review (IPR) FY19																												
Acquisition: Interim Program Review (IPR) FY20																												
Acquisition: Interim Program Review (IPR) FY21																												
Acquisition: Interim Program Review (IPR) FY22																												
Contracting: Block 4 Pre-Modernization																												
Contracting: Block 4 Modernization																												
Systems Engineering: Initial Preliminary Design Review (PDR) 4.1																												
Systems Engineering: Initial Preliminary Design Review (PDR) 4.2																												
Systems Engineering: Initial System Requirements Review (SRR) 4.1																												
Systems Engineering: Initial System Functional Review (SFR) 4.1																												
Test & Evaluation: 4.1 Test																												
Test & Evaluation: 4.2 Test																												
Fielding: Block 4.1 Fleet Availability																												
Fielding: Block 4.12Fleet Availability																												

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> FY 2018 Air Force			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207142F / <i>F-35 Squadrons</i>	<b>Project (Number/Name)</b> 675346 / <i>F-35</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Requirements: Final CDD (JROC)	3	2017	3	2017
Acquisition: Modernization RFP Decision	1	2018	1	2018
Acquisition: Modernization Contract Decision	1	2019	1	2019
Acquisition: Interim Program Review (IPR) FY18	1	2018	1	2018
Acquisition: Interim Program Review (IPR) FY19	1	2019	1	2019
Acquisition: Interim Program Review (IPR) FY20	1	2020	1	2020
Acquisition: Interim Program Review (IPR) FY21	1	2021	1	2021
Acquisition: Interim Program Review (IPR) FY22	1	2022	1	2022
Contracting: Block 4 Pre-Modernization	1	2016	2	2018
Contracting: Block 4 Modernization	3	2018	4	2022
Systems Engineering: Initial Preliminary Design Review (PDR) 4.1	2	2019	2	2019
Systems Engineering: Initial Preliminary Design Review (PDR) 4.2	3	2020	3	2020
Systems Engineering: Initial System Requirements Review (SRR) 4.1	1	2017	1	2017
Systems Engineering: Initial System Functional Review (SFR) 4.1	1	2018	1	2018
Test & Evaluation: 4.1 Test	4	2019	4	2020
Test & Evaluation: 4.2 Test	2	2021	4	2022
Fielding: Block 4.1 Fleet Availability	4	2020	4	2020
Fielding: Block 4.12Fleet Availability	4	2022	4	2022

**Note**

Schedule details reflect fiscal years



# UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017			
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
676011: JSF DUAL CAPABLE AIRCRAFT	25.297	4.967	25.743	35.122	0.000	35.122	47.016	49.026	67.040	62.599	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
F-35 FoM Includes: USAF: PE 0207142F BPAC 675346												
USN: PE 0604810N Project Unit 2936												
USMC: PE 0604810M Project Unit 2935												
F-35 DCA Includes: USAF: PE 0207142F BPAC 676011												
A. Mission Description and Budget Item Justification												
F-35 Follow-on Modernization (FoM) provides continuing incremental upgrades of the three F-35 variants and associated ground equipment. Upgrades are essential mission improvements for Air Interdiction and Strategic Attack, Close Air Support, Suppression and Destruction of Enemy Air Defenses, Offensive and Defensive Counter Air and expanded Surface Warfare. The Block 4 acquisition strategy is based upon incremental deliveries of capabilities in 4 sub-blocks. The strategy includes deliveries on a two year cycle with a focus on hardware and tech refresh change every four years. FoM capability planning includes an efficient transition from F-35 SDD to Follow-on Modernization. As SDD development activities ramp down, FoM will assume responsibility for improvements and modernization efforts. Block 4 capability planning includes Block 4.1 through 4.4 modernization efforts with intial increment of capability available in 2020 and subsequent releases every two years.												
Additionally, the F-35 Joint Strike Fighter (JSF) Operational Requirements Document (ORD) calls for the F-35A variant to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations in the first post SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operation for the F-35A is internal carriage of two B-61s. Due to extensive certification requirements, the Follow-on Modernization Capability Development Document (CDD).												
This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Dual Capable Aircraft (DCA)(F-35 JSF)								4.967	25.743	35.122	-	35.122

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons			Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<p><b>Description:</b> This effort provides for the assessment of Dual-Capable Aircraft (DCA) weapon integration and certification impacts on the Joint Strike Fighter (JSF) aircraft. It identifies and mitigates potential technical and cost risks, as well as defines the integration and certification trade-space to field the DCA capability with the B61-12 weapon. This effort also supports follow-on risk reduction efforts that will ensure future integration alignment with the earliest feasible post-SDD block upgrade, and is expected to include full integration efforts pending Service decisions.</p> <p><b>FY 2016 Accomplishments:</b> Continued pre-modernization integration efforts to mature DCA unique requirements on the F-35A Air System. Evaluated and identified impacts to the design to enable all aspects of carriage and employment of the B61-12 weapon, to include a survivability analysis to understand impacts of weapon to F-35 materiel components. Other efforts included initiation of Nuclear Certification activities focused on generating preliminary design reports, nuclear safety evaluation plans, and nuclear safety analysis reports.</p> <p><b>FY 2017 Plans:</b> Continue Nuclear Certification activities focused on generating preliminary design reports, nuclear safety evaluation plans, and nuclear safety analysis reports. Conduct sub-block 4.1 System Requirements Review (SRR) and continue DCA requirements decomposition.</p> <p><b>FY 2018 Base Plans:</b> Complete Static Ejection and Wind Tunnel Tests for initial Separation Analysis. Perform additional data analysis to support Block 4 System Functional Review and Preliminary Design Review. Complete interagency resource planning for integration/certification of B61-12 on F-35A. Complete preliminary design reports, nuclear safety evaluation plans, and nuclear analysis reports. Conduct sub-block 4.1 System Functional Review (SFR).</p>											
Accomplishments/Planned Programs Subtotals							4.967	25.743	35.122	-	35.122
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604800F 3831: JSF SDD, BPAC 653831	497.031	403.505	255.745	0.000	255.745	69.655	7.796	5.598	0.000	0.000	22,265.228
• RDTE: BA05: PE 0604800F 3832: JSF Deployability and Suitability Enhancements, BPAC 653832	78.901	46.962	37.202	0.000	37.202	0.000	0.000	0.000	0.000	0.00	238.599

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017			
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost	
• RDTE: BA07: PE 0207142F	47.023	127.302	299.408	0.000	299.408	463.321	474.971	396.488	263.548	Continuing	Continuing	
5346: JSF Follow-on Modernization (FoM), BPAC 675346												
• APAF: BA01: Line Item # ATA000 AP: JSF CTOL Advance Procurement, PE 0207142F, BP10 AP	460.260	404.500	780.000	0.000	780.000	405.200	1,003.600	965.300	414.700	13,451.541	20,181.883	
• APAF: BA01: Line Item # ATA000: JSF CTOL, PE 0207142F, BP10	5,259.812	4,997.394	4,544.684	0.000	4,544.684	4,253.696	4,209.813	4,862.684	4,796.042	144,128.756	198,657.199	
• APAF: BA06: Line Item # F03500 BP16: JSF Initial Spares, PE 0207142F, BP16	229.582	362.792	320.831	0.000	320.831	319.151	416.722	399.361	394.654	3,893.112	7,567.519	
• APAF: BA05: Line Item # F03500 BP11: JSF Modifications, PE 0207142F, BP11	70.167	175.811	68.270	0.000	68.270	230.448	279.814	259.978	301.899	Continuing	Continuing	
• USAF OM: Operations and Maintenance	312.557	425.978	452.906	0.000	452.906	555.687	873.270	998.979	958.708	Continuing	Continuing	
• OPAF: BA01: Line Item # 821800: Joint Strike Fighter, PE 0207142F	3.858	2.333	3.326	0.000	3.326	3.310	2.993	2.463	2.507	Continuing	Continuing	
• MILCON: BA01: PE 0207142F: USAF JSF Military Construction Operations	132.850	305.700	80.000	0.000	80.000	27.500	0.000	0.000	0.000	1,312.100	2,511.350	
• MILCON: BA01: PE 0207597F: USAF JSF Military Construction Training	65.400	20.000	21.000	0.000	21.000	34.000	15.900	0.000	0.000	0.00	156.300	
• MILCON: BA01: PE 0502635F: USAF JSF Military Construction Air National Guard	0.000	15.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	15.100	
• RDTE: BA05: PE 0604800N 2261: JSF SDD (CV)	453.036	504.296	103.144	0.000	103.144	61.179	1.637	0.454	0.467	0.00	19,983.056	
• RDTE: BA05: PE 0604800N 3352: F-35C Sustainment/ Capability Enhancements (CV)	35.666	24.420	5.787	0.000	5.787	4.995	0.000	0.000	0.000	0.00	108.345	

## UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force									Date: May 2017			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)				
3600 / 7				PE 0207142F / F-35 Squadrons				676011 / JSF DUAL CAPABLE AIRCRAFT				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost	
• RD TEN: BA05: PE 0604810N 2936: F-35C Follow-on Modernization (CV), BPAC 2936	20.544	63.387	143.855	0.000	143.855	225.442	229.055	189.104	121.613	Continuing	Continuing	
• APN: BA01: Line Item # 0147C: JSF Advance Procurement (CV), PE 0204146N	48.630	80.908	263.112	0.000	263.112	144.282	252.453	262.416	267.146	2,147.943	5,140.935	
• APN: BA01: Line Item # 0147: JSF (CV), PE 0204146N	1,033.142	890.650	582.324	0.000	582.324	1,105.952	1,805.276	2,582.852	2,730.285	27,953.966	55,785.279	
• APN: BA06: Line Item # 0605 USN: Initial Spares (CV), PE 0204146N	59.914	26.076	84.591	0.000	84.591	44.971	52.858	303.608	309.680	Continuing	Continuing	
• APN: BA05: Line Item # 0593: Modifications (CV), PE 0204146N	48.527	26.004	31.689	0.000	31.689	22.344	14.155	13.404	13.672	Continuing	Continuing	
• OPN: BA03: Line Item # 4268: JSF Aviation Support Equipment ALIS Ship Alts	48.773	39.099	34.032	29.245	63.277	37.742	46.019	47.389	62.299	Continuing	Continuing	
• OPN:BA03: ALIS Ship ALTS Installs	1.924	0.329	2.024	0.000	2.024	1.890	1.933	1.972	0.986	Continuing	Continuing	
• OPN:BA03 USN: Optical Landing System Investment	0.000	1.800	1.800	0.000	1.800	1.800	3.300	0.000	0.000	Continuing	Continuing	
• OPN:BA03:: Spares for Aviation Support Equipment	2.946	0.881	2.297	0.000	2.297	2.321	0.139	1.977	0.000	Continuing	Continuing	
• USN OM: Operations and Maintenance	78.529	120.648	207.302	0.000	207.302	211.332	236.682	281.622	327.009	Continuing	Continuing	
• USN MILCON: USN JSF Military Construction	94.420	203.900	64.660	0.000	64.660	121.990	119.800	0.000	0.000	642.400	1,406.074	
• RD TEN: BA05: PE 0604800M 2262: JSF SDD (STOVL)	495.428	507.078	141.534	0.000	141.534	55.952	1.721	0.547	0.564	0.000	3,874.211	
• RD TEN: BA05: PE 0604800M 3350: F-35B Sustainment/ Capability Enhancements (STOVL), BPAC 3350	30.819	24.348	11.400	0.000	11.400	0.000	0.000	0.000	0.000	0.00	99.115	

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost	
• RD TEN: BA05: PE 0604810M 2935: F-35B Follow-on Modernization (STOVL), BPAC 2935	20.157	74.227	144.958	0.000	144.958	226.310	230.383	190.442	123.531	Continuing	Continuing	
• APN: BA01: Line Item # 0152C: JSF Advance Procurement (STOVL), PE 0204146M	203.060	233.648	413.450	0.000	413.450	228.492	231.802	220.822	225.245	1,959.119	4,802.154	
• APN: BA01: Line Item # 0152: JSF (STOVL), PE 0204146M	2,147.714	2,040.681	2,398.139	0.000	2,398.139	2,338.179	2,404.257	2,585.039	2,600.750	20,548.402	42,209.667	
• APN: BA06: Line Item # 0605 USMC: Initial Spares (STOVL), PE 0204146M	111.569	123.252	105.671	0.000	105.671	92.198	160.150	140.989	143.809	Continuing	Continuing	
• APN: BA05: Line Item # 0592: Modifications (STOVL), PE 0204146M	204.464	34.928	34.963	0.000	34.963	70.305	67.039	79.174	80.761	Continuing	Continuing	
• USMC OM: Operations and Maintenance	184.171	233.576	315.630	0.000	315.630	375.578	412.813	470.490	544.031	Continuing	Continuing	
• USMC MILCON: USMC JSF Military Construction	21.960	219.100	64.660	0.000	64.660	121.990	119.800	0.000	0.000	642.400	1,966.114	
• International 1: International SDD	17.000	22.000	27.450	0.000	27.450	0.000	0.000	0.000	0.000	0.00	5,013.463	
• International 2: International Production	189.922	185.641	124.114	0.000	124.114	151.776	150.588	149.848	87.113	Continuing	Continuing	
• International 3: International FoD	83.595	84.602	158.273	0.000	158.273	159.649	162.023	167.383	160.111	Continuing	Continuing	
• International 4: International Unique (SDD/PSFD)	38.483	32.374	15.566	0.000	15.566	22.812	29.409	5.357	0.000	0.000	482.417	
Remarks												
F-35 Follow-on Modernization (FoM) provides continuing incremental upgrades of the three F-35 variants and associated ground equipment. Upgrades are essential mission improvements for Air Interdiction and Strategic Attack, Close Air Support, Suppression and Destruction of Enemy Air Defenses, Offensive and Defensive Counter Air and expanded Surface Warfare. The Block 4 acquisition strategy is based upon incremental deliveries of capabilities in 4 sub-blocks. The strategy includes deliveries on a two year cycle with a focus on hardware and tech refresh change every four years. FoM capability planning includes an efficient transition from F-35 SDD to Follow-on Modernization. As SDD development activities ramp down, FoM will assume responsibility for improvements and modernization efforts. Block 4 capability planning includes Block 4.1 through 4.4 modernization efforts with intial increment of capability available in 2020 and subsequent releases every two years.												

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Air Force			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207142F / <i>F-35 Squadrons</i>	<b>Project (Number/Name)</b> 676011 / <i>JSF DUAL CAPABLE AIRCRAFT</i>	

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<p>Additionally, the F-35 Joint Strike Fighter (JSF) Operational Requirements Document (ORD) calls for the F-35A variant to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations in the first post SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operation for the F-35A is internal carriage of two B-61s. Due to extensive certification requirements, the Follow-on Modernization Capability Development Document (CDD).</p>											

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

**D. Acquisition Strategy**

The DCA effort will leverage contracting vehicles for the overall Block 4 F-35 Follow-on Modernization (FoM) effort. Fee provisions will be used to target and motivate contractor performance.

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Lockheed Martin - DCA Integration	SS/CPFF	Lockheed Martin : Ft. Worth, TX	23.525	4.967	Mar 2016	25.743	Jul 2017	35.122	Mar 2018	0.000		35.122	Continuing	Continuing	-
DCA Requirements Decomposition	SS/CPAF	Lockheed Martin : Ft. Worth, TX	0.948	0.000		0.000		0.000		0.000		0.000	0.000	0.948	-
Subtotal			24.473	4.967		25.743		35.122		0.000		35.122	-	-	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prime LM IDIQ 13-D-0005 B61-12 Test Support	SS/CPFF	Lockheed Martin : Ft. Worth, TX	0.820	0.000		0.000		0.000		0.000		0.000	0.000	0.820	-
B61-12 Risk Reduction Test Support	PO	Air Force Seek Eagle Office : Eglin AFB, FL	0.004	0.000		0.000		0.000		0.000		0.000	0.000	0.004	-
Subtotal			0.824	0.000		0.000		0.000		0.000		0.000	0.000	0.824	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force										Date: May 2017				
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT					
		Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		25.297	4.967		25.743		35.122		0.000		35.122	-	-	-
Remarks F-35 FoM Includes: USAF: PE 0207142F BPAC 675346  USN: PE 0604810N Project Unit 2936  USMC: PE 0604810M Project Unit 2935  F-35 DCA Includes: USAF: PE 0207142F BPAC 676011														



**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: FY 2018 Air Force</b>																<b>Date: May 2017</b>			
<b>Appropriation/Budget Activity</b> 3600 / 7								<b>R-1 Program Element (Number/Name)</b> PE 0207142F / F-35 Squadrons								<b>Project (Number/Name)</b> 676011 / JSF DUAL CAPABLE AIRCRAFT			

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
DCA Risk Reduction																												
Nuclear Certification																												
Requirements Decomposition Contract (Nuclear Certification Tasks)																												
Pre-Modernization Contract (Nuclear Certification Tasks) and Preliminary Engineering & Design																												
Modernization Contract (Nuclear Certification Tasks) and Design, Build & Test																												

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> FY 2018 Air Force			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207142F / <i>F-35 Squadrons</i>	<b>Project (Number/Name)</b> 676011 / <i>JSF DUAL CAPABLE AIRCRAFT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DCA Risk Reduction	1	2016	4	2017
Nuclear Certification	1	2016	4	2022
Requirements Decomposition Contract (Nuclear Certification Tasks)	1	2016	1	2017
Pre-Modernization Contract (Nuclear Certification Tasks) and Preliminary Engineering & Design	1	2016	3	2018
Modernization Contract (Nuclear Certification Tasks) and Design, Build & Test	3	2018	4	2022

**Note**

Schedule details reflect fiscal years